



# inps journal

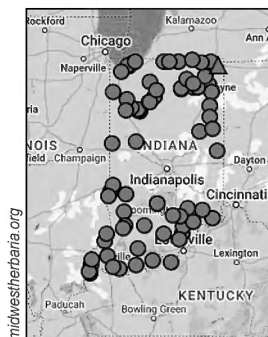
Indiana Native Plant Society

Summer 2025

## Cardinal Red

By Fred Wooley

Cardinal flower only has a few herbarium records from the central part of Indiana.



midwestherbaria.org

The color palette of mid-summer native plants might be the boldest. Saying goodbye to springtime on the vernal equinox we bid farewell to the pastels of April, May, and June. Enter July in its fireworks finest of bold yellows, purples, oranges, bright whites, and, the richness of one red in particular, the cardinal flower (*Lobelia cardinalis*).

Found in moist prairies and along streambeds and lakeshores, cardinal flower grows two to four feet tall. Single stalks of lance-shaped leaves in July push forth a spike of blooms typical of lobelia plant family members, each bloom with two narrow petals pointing up and three reflexing down. The petals unite to form a narrow tube at the base.

The blue lobelia (*L. siphilitica*) is more common: it finds comfort with its "feet" in wet prairies, moist woodlands, roadside ditches, and along damp edges of waterways. The cardinal flower is less common but makes every effort to be noticed with those deep, vibrant red blooms. They seem more limited to the shadowy watery edges and

only occasionally venture into more open moist meadows.

There are some reds in nature and then there is the cardinal flower red. Not all reds are created equal. A cardinal (*Cardinalis cardinalis*), the state bird of Indiana and six other states, is sometimes called the "red bird." But really give the next one to your feeders a

good look. It is more of an orange red.

Take a similar look at the red of a red-headed woodpecker (*Melanerpes erythrocephalus*). That hood is a striking magenta red. A magenta-headed woodpecker would be a bit of a mouthful. A scarlet tanager (*Piranga olivacea*) calling and lurking up in the leafy shadows of a tall treetop,

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now that is red! But perfectly named, it is a scarlet tanager. There is a southwestern flycatcher that is eye-popping red, but most appropriately named the vermillion flycatcher.

Cardinal flower red reminded European settlers of the same red of the hoods and robe vestments worn by Roman Catholic Cardinals. The scientific name, *Lobelia cardinalis*, is a reference to the French botanist, Mathis de Lobel, and of course the cardinal red.

The flower stalk blooms from the bottom up. In my native plant garden I photographed the first bloom of the season in late June. Blooming continues up the stalk until all are in full and glorious bloom. Other red spikes will follow, lasting almost until the autumn leaves begin to show color.

*Cardinal* — continued on page 3



Fred Wooley

Cardinal flower, while ill-suited for pollination by bees, can entertain us human observers with the sights and sounds of hummingbirds.

# Landscaping with Native Plants in the Suburbs

## By Laura McCloughan

When designing home landscapes using native plant species in a typical suburban community, there are two main goals you will want to achieve. Your first goal is to ensure the design provides vital ecosystem functions. Your second goal is to make it visually pleasing. This may seem intimidating at first, but by employing the following concepts and guidelines, you can accomplish your desired results while keeping your neighbors happy!



Laura McCloughan

*This native plant landscape uses trees and shrubs as a structural layer, flowering plants as a seasonal layer, and low-growing plants as a ground cover layer.*

**Let's start with your first goal.** Landscapes can best provide vital ecosystem services when they create regionally appropriate, native plant communities that mimic nature. You can achieve this by planting in layers to create functional diversity and a dynamic, textured landscape. This technique prevents plants in separate layers from competing for water and nutrients and allows for greater plant density. It also has the added benefit of lower maintenance requirements. You can read more about this layering concept in *Planting in a Post Wild World* by Thomas Rainer and Claudia West.

1. **The first layer** in a designed plant community is the structural layer which provides year-round interest. It consists of taller plants with more distinct forms. These include trees, shrubs, upright grasses, and perennials. These plants are long-lived and clump forming, and should comprise 10-15% of your design.

2. **The second layer** of your design is the seasonal layer which provides color from spring to fall and also acts as green filler to the structural layer when not in bloom. These seasonal plants, which comprise 20-40% of your design, are mid-height species with medium to long lifespans. When planted in masses or drifts, they provide visual appeal and impact.
3. **The third layer** of your design is the ground cover layer which consists of low growing plants that can tolerate the shade cast by the seasonal layer. Planted in a 12" matrix, these plants will function as a "green mulch" which helps to suppress weeds, enrich the soil, retain soil moisture, and maintain soil temperature. They should comprise approximately 50% of your design.

When selecting plant species for each of these layers, diligent research is an absolute must! Always consider these important factors:

1. Assess each species' recommended soil, water, and light conditions to successfully match the "right plant to the right place."
2. Avoid aggressive native species – they can easily overtake your yard.
3. Utilize native cultivars (nativars) when low-growing plants are required since many wild-type native plants are too large for your specific needs.
4. Prioritize the use of "keystone" plant species that host the greatest number of lepidopterans (see <https://nwf.org/nativeplantfinder>) and strive for an 80% native plant palette to provide the most benefits to your local food webs.

### **Next, let's discuss your second goal.**

Traditional home landscapes, with their simplified communities of mostly non-native ornamentals, focus almost entirely on a visually pleasing appearance. To fit in with your neighborhood and avoid HOA complaints, you will also need to concentrate on the aesthetic value of your landscape plan. You can employ these three guidelines to achieve this goal:

1. **Consider Plant Size** – Limit your plant height (except for trees) to 2-3' in all areas that are visible to the public. This will ensure your plants won't flop, creating an unsightly effect, and won't impair your neighbors' sight

## Cardinal — continued from front page

lines. Only use taller plants if placed in the back of your beds against walls and fences or for privacy screening purposes.

**2. Optimize Your Seasonal Layer** – Ensure you always have plants flowering from spring to fall but limit the number of blooming species at any given time to avoid a chaotic feel. Ideally, 2 at a time for smaller yards, 3 for mid-sized yards, and 4 for larger ones works best. Plant in masses or drifts to create a sense of order and repeat throughout the landscape to create a coherent design.

**3. Employ “Cues of Care”** – Your plantings should look intentional to avoid the weedy appearance often associated with native gardens. Create paths using mulch, gravel, stepping stones, or mowing strips. Add design elements such as seating, garden sculpture, rock edging, stone walls, trellises, fences, or birdbaths. Signage that educates the public has proven effective at preventing complaints from HOAs and neighbors.

You can read more about these design concepts in *Prairie Up: An Introduction to Natural Garden Design* by Benjamin Vogt.

If all of this seems a bit too overwhelming, don't worry. You can start by just planting a few natives in pots on your patio or adding some to already existing beds – even your smallest efforts will help Mother Nature! Whether you start small or go big, try using these basic design concepts and guidelines to create home landscapes that are both beautiful and beneficial to the environment!

### Helpful Resources

Indiana native plant suggestions – [indiananative-plants.org/plant-finder-for-pollinators](https://indiananative-plants.org/plant-finder-for-pollinators)

Where to buy native plants in Indiana – [indiananative-plants.org/landscaping/where-to-buy](https://indiananative-plants.org/landscaping/where-to-buy)

Design concepts for native landscaping – [monarchgard.com](https://monarchgard.com)

Detailed garden design specific to the Indianapolis area – [nativegardendesigns.wildones.org](https://nativegardendesigns.wildones.org)

Residential and HOA landscape plans specific to Indiana – [hamiltonswcd.org/landscape](https://hamiltonswcd.org/landscape)

Laura McCloughan, a member of the Central Chapter of INPS, serves on the Hamilton County Invasives Partnership Education Committee and is a Master Gardener.

The red blooms are not unnoticed by pollinators. Unlike many plants, cardinal flower petals are very delicate. They simply cannot support the weight of bees and other insects. Other lighter insects find it difficult to navigate the long tubular base of the bright red petals.

The perfect pollinator for this species is our ruby-throated hummingbird (*Archilochus colubris*). Hummers hover at the flower opening, insert that wonderfully long and slender bill, extend their equally long tongue and lap at the sweet nectar. Flowers provide the nectar; hummers provide the pollination.

Cardinal flowers are available in native seed catalogs and native plant nurseries. While preferring a shady stream and lake shorelines, they can provide color in home landscapes if watered well and provided with some shade. In less-than-ideal conditions the plants may not spread or they may only survive a few years.

But who can resist their red torches that light a summer's evening, and maybe the view and sound of a visiting hummingbird.

Fred Wooley is a naturalist, writer, and land preservation/restoration enthusiast. He lives on part of an old farm overlooking an extensive fen in northern Steuben County. He can be reached at [fwooley@frontier.com](mailto:fwooley@frontier.com). A version of this piece first appeared in the July 2, 2024 KPCNews Outdoor Page.

Blue lobelia is the most common of our six native lobelias.



This June 28, 2024 photo from Steuben County shows that the lowest flower in the spike blooms first and then progresses upwards.

Fred Wooley

## Book Review:

# *Oak Origins: From Acorns to Species and the Tree of Life* By Andrew L. Hipp

### Reviewed by Mark Sheehan

If you have an interest in Indiana's natural history, you've probably formed some impressions of oak trees. They're keystone species in most forested Hoosier landscapes. Their leaves and acorns feed insects, birds, and mammals. Their strong wood is valuable for construction, cabinetry, and cooperage.

You may also be aware that Indiana has a diverse assortment of oaks, comprising 18 tree species and one shrub. Marion Jackson's field guide, *101 Trees of Indiana*, devotes 36 pages to oaks, more than twice as many as any other genus. In addition to the 19 discrete species of Indiana oaks, the Biota of North America Program's North American Plant Atlas (BONAP, 2025) shows 14 named oak hybrids occurring here.

It's not only Indiana that has an abundance of oaks. For the 48 contiguous United States, BONAP lists a total of 188 native oaks, including 92 species and 96 named hybrids. The numbers for oaks in Europe and Asia are similar.

Given the taxonomic diversity, oak identification can be difficult. Even within a species, oaks display remarkable variability, particularly in leaf shape, but also in bark and disease resistance. This type of variability within a species is called plasticity and it often reflects a tree's ability to respond to particular growing conditions.

Clearly, something is going on with the oaks. How did there come to be so many species? To what do they owe their remarkable plasticity? What causes them to hybridize so freely? For answers to those questions and many others, naturalists now have a comprehensive resource in Dr. Andrew L. Hipp's new book, *Oak Origins: From Acorns to Species and the Tree of Life* (2024, University of Chicago Press).

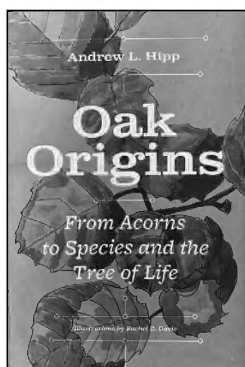
Hipp is Director of the Herbarium and Senior Scientist in Plant Systematics at the Morton Arboretum in Lisle, Illinois. His research interests are varied, but for many years they have included the oaks, their evolution, and their biogeography. He is also a perceptive general naturalist and an expressive writer, gifts he has shared online since 2017 in his blog, *A Botanist's Field Notes* (<https://botanistsfieldnotes.com/>). *Oak Origins* is set in a matrix of natural history lore and metaphor that attests to the author's deep connection to the natural world.

*Oak Origins* is a detailed description of the evolution of the oaks over the past 56 million years, from their origins in the beech family (Fagaceae). The book begins with the basics of the oak life cycle, including wind pollination, which ensures the mixing of genetic material among neighboring and distant oak populations, and the production of nutritious acorns, which encourage short-range seed dispersal by rodents as well as longer-range dispersal by birds. Hipp's story then follows the oaks' evolution through geological time into species that have proven successful in highly varied habitats and able to adapt – or migrate – as the environment has repeatedly changed.

Almost like characters in a novel, the concepts and the tools of evolutionary biology make periodic appearances in the *Oak Origins* story. If you wonder how scientists learn about variation, heredity, and fitness, Hipp will show you. In fact, much of the book serves as a window into the life of a plant systematist: long hours poring over DNA databases; weeks spent in the field, collecting material and mapping populations; and years spent in collaborative scientific efforts on a global scale. Emphasizing the latter point, *Oak Origins* is a 327-page book in which 202 pages are narrative text and illustrations, and 64 pages are "Literature Cited." Thus, nearly 20 percent of the book acknowledges and catalogues the work of the author, his collaborators, and scientists worldwide.

Oaks, with their multi-million-year history of swapping genes – old standby genes and new mutations – have so far had the ability to adapt to changing conditions. However, the pace of climate change forecast for the planet is unprecedented. Early in *Oak Origins*, Hipp points to biogeographical studies of oaks in China and Europe about which he says, "These studies ... raise the question ... of whether the combination of evolution at the population level, gene flow via pollen, and migration via acorns will enable oaks to keep up with climate change."

As he concludes the book, however, Hipp finds – and gives us – reason to hope. "The good news is that we still have time," he says. "[W]e know enough to slow climate change and undo some of what we've done to our planet." In addition to potential climate mitigation, Hipp points to innovations in oak propagation



letting us “bank” oak genes, to the planting of conservation collections to supply seeds for humans to disperse, and to efforts “to address the reproduction crisis” in several species of oak that are in decline, including Indiana’s own white oak (*Quercus alba*). “Above all,” Hipp says, “people recognize that trees matter and that there are concrete actions all of us can take.”

If you want a fascinating, maybe somewhat challenging new natural history book to read, *Oak Origins* would be a good choice. If you need something to do *right now*, how about planting a white oak?

#### Reference

Biota of North America Program. 2025. North American Plant Atlas. Website accessed 3/23/2025 <https://bonap.net/Napa/Genus/County/Quercus>

Mark Sheehan, a member of the South Central Chapter of INPS, works and plays among the oaks of northern Brown County.



Acorns, such as those of yellow chestnut oak, have a complex relationship with squirrels, especially our eastern gray squirrel (*Sciurus carolinensis*). These herbivores tend to eat the fresh, non-dormant acorns of the white oak group first and cache the dormant (and also tannin-rich) acorns of the black oak group for later consumption. Some native American peoples used acorns as a staple of their diet.

All photos by P. Rothrock



The white oak group (sect. *Quercus*) includes yellow chestnut oak (*Quercus muehlenbergii*). The leaves of these species lack bristle tips on their lobes or toothy margins. Their acorns mature in their first year and possess a sweetish kernel.



The black oak group (sect. *Lobatae*) includes pin oak (*Q. palustris*), seen here as its leaves enlarge in spring. The leaves of pin oak have bristle-tipped lobes. Their acorns do not mature until their second year of development and have kernels that are rich in astringent tannins.



As demonstrated by pin oak, oaks are monoecious, i.e., they have separate male and female flowers on the same plant. Since these are wind pollinated, the flowers, especially the female ones (see arrow), lack showy petals. The male flowers are packed with dry pollen.



# My Native Plant Project

## By Violet Miller

I am in fifth grade at Joseph J. Bingham School 84, Center for Inquiry (CFI 84) in Indianapolis. My school is an International Baccalaureate (IB) school. It has a special curriculum that focuses on creating a better and more peaceful world. IB schools aim to develop a community of life-long learners who use inquiry, critical thinking, and problem-solving skills to be socially responsible contributors to a changing global society. I really like this mission because it makes me feel as though I can make a difference in the world.

At CFI 84 and other IB schools around the world, fifth grade students complete a project called Exhibition. This project requires

good way to share the information with others and is a fun way to be artistic.

Since I have an interest in plants and flowers, I chose to learn about native plants. This topic allowed me to do something unique and different from what others were doing. Many of my classmates chose to research mental health, animals, and littering. I also wanted to do something with the environment and nature because I really enjoy being outside and I think it's important to take care of our outdoor spaces. My dad really likes to garden so I knew he could help with my action.

To get started on my project, I had to pick a central idea. Mine was that native plants affect our everyday lifestyle and well-being. Next, I had to choose lines of inquiry. These topics help guide my research and keep my project on track. My lines of inquiry were how native plants help the environment; flowers, plants, and trees that are native to Indiana; and the impact of invasive plants.

My library provided books on native plants in our region. These helped me to find some specific plants I was interested in learning more about as well as some general facts. My mom bought a copy of *Wake Up, Woods* which I included in my Exhibition display. Through research online, I discovered the Indiana Native Plant Society website. There was a lot of good information on the website! As part of my project, I had to find an expert to interview. I contacted the Indiana Native Plant Society by email and got really lucky. I received many responses and even got to meet a new neighbor. One of the founding members, Ms. Ruth Ann Ingraham, invited me over to do an in-person interview. She answered many questions about native plants and gave me a tour of her native plant garden. I thought it was really neat how many different types of native plants she had in her yard! After visiting with Ms. Ingraham, I realized that native plants are everywhere! On my walk to school, I pass houses with yards full of violets (*Viola* spp.), dogwood (*Cornus florida*), redbud (*Cercis canadensis*), and species of native shrubs. It makes me happy to see that my neighbors also care about native plants.

Violet's display board details her native plant project with text, photos, and live plants.



that students choose a problem in the local community and conduct research to learn about it. Students also must do an action to make an impact or raise awareness and create a display board with information about the topic they chose. The display board is a

For my action I started seeds from a native plant, swamp milkweed (*Asclepias incarnata*), and waited for them to grow so I could hand out seedlings to others. I also left some seeds in the refrigerator to cold stratify them so that they were ready to be planted. I handed out the seeds in moist paper towels in baggies during Exhibition. The seedlings didn't grow as quickly as I had hoped so I didn't have too many to share when I gave my presentation, but now I have a whole bunch. I brought more of the seedlings to our school gardening day so people can take them home to plant in their yard. We also planted some at school.

This project really helped me grow my knowledge of native plants. I learned that native plants help protect our waterways because they don't need the extra things like weed killer and fertilizer that the non-natives do. All those chemicals can get picked up by the rain and the water that drains into nearby lakes and rivers. This causes pollution and makes the water unsafe for animals. Native plants are really good for pollinators. Having a lot of pollinators is important for growing fruits and vegetables. I learned that one of my favorite native plants is the Virginia bluebells (*Mertensia virginica*) because they are a really pretty color of blue and their shape appeals to me. Another favorite native are the wild violets, because my name is Violet.

My final line of research was to ask how kids can help. It's actually really easy to do. One way is to learn to identify native plants and invasive plants. It's important to remove invasive plants whenever we can. Kids can take part in an invasive plant pull like garlic mustard (*Alliaria petiolata*). Kids can help to plan garden spaces at home or school and choose native species instead of invasive species. It is important to stay on the trails when walking in nature to keep native plants from being trampled. Lastly, kids can share their enthusiasm for native plants with everyone! The more people who know about native plants and why they are important the better!

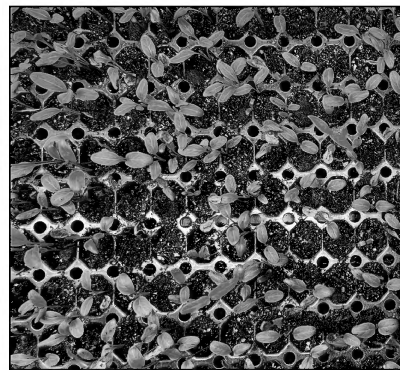
Overall, I felt like my project helped the environment by raising awareness about

native plants and helping to grow more milkweed plants in our neighborhood. I will continue to learn more about native plants and encourage my neighbors to do the same.

*Violet Miller is 11 years old and has two older brothers and three cats — Cleo, Luna, and Sunny. Violet enjoys being active in sports and the arts. She hopes that others will be inspired by the beautiful things outside and keep the Earth clean and green.*



*Violet's Exhibition included the offer of live plants or stratified seed of swamp milkweed to those who visited her display.*



*Violet Miller*



*Erm Miller*

*Ruth Ann Ingraham, a Central Chapter member of INPS, was interviewed by Violet as part of her Exhibition. Ruth Ann also provided a garden tour, demonstrating the use of native plants in a landscape.*

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## **Mission**

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

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**Share online:** Send information for posting to [webmaster@indiananativeplants.org](mailto:webmaster@indiananativeplants.org).



# 2025 INPS Annual Conference

Mark your calendars:

Friday and Saturday October 24 & 25, 2025 at Grand Wayne Center, Fort Wayne, Indiana.

Saturday Speakers:

**Larry Weaner**, New Directions in American Landscape (AM KEYNOTE) – Planning for the Unplanned: Integrating Ecological Restoration Techniques and Landscape Design.

**Chris Helzer**, Director of Science and Stewardship at TNC Nebraska – Stories from the Grassland and the Square Meter Project.

**Zurianne (Zuri) Carter**, Deputy Chief Natural Resource Officer for Metroparks, Toledo – Advancing Natural Areas Management in the Oak Openings Region Through Public/Private Collaboration for Management and Research Utilizing Diversified Funding.

**Roy Diblik**, Garden Designer and Co-Owner of Northwind Perennial Farm (PM KEYNOTE) – Coming to Know Plants: Understanding Plant Relationships in the Garden.

**Justin Thomas**, Director and Instructor at the Institute of Botanical Training – Plant/Soil Interactions.

**Dr. Louise Weber**, Professor of Biology and Environmental Science at the University of St. Francis in Fort Wayne – The Psychological Benefits of Nature.

Friday there are several hikes offered throughout the area. Stay tuned to social media for specifics and registration information.



Chris Carlson

*Two Butler University students, Toni Jazvic and Molly Hobson, manned one of many informative displays at AC2024.*

## INPS Chapter Activity:

Belmont Beach, along the White River just south of 16th Street, was a haven for Black residents of Indianapolis during the era of racial segregation. Now as a public park, it continues to serve the Haughville neighborhood. Recently, neighborhood partners have worked with the Central Chapter of INPS to remove invasive plant species and replace them with natives. This work crew planted five Shumard oak (*Quercus shumardii*) trees this past winter to provide shade for the visitor's center and parking lot area.



courtesy of Brooke Alford

## Book Review

# Carex of Illinois and Surrounding States: The Oval Sedges

By Michael Murphy, Greg Spyreas, and Paul Marcum

### Reviewed by Scott Namestnik

Imagine a botanist's excitement upon hearing that renowned Illinois caricologists Michael Murphy, Greg Spyreas, and Paul Marcum were working on a new book that would cover everyone's favorite group of *Carex* sedges, the oval sedges! The oval sedges (*Carex* section *Cyperoideae*, formerly known as section *Ovales*) share the characteristics of caespitose growth form, brown basal sheaths, inflorescences made up of gynecandrous and sessile (or nearly so) spikes, and scale-like perigynia tightly enclosing pistillate flowers with two stigmas and two-sided achenes. Because the 22 taxa of oval sedges that occur in Indiana are among the 26 taxa that occur in Illinois and that are highlighted in this book, this resource is a must-have for anyone with an intimate connection to Indiana's flora.

Upon seeing the gorgeous cover of the book, which highlights inflorescences of 16 of the oval sedge taxa that occur in Illinois, my anticipation immediately grew. The large format (8 1/2" x 11") book, which measures approximately 1/4" thick and has a flexible cover and 17 pages left blank in the back for field notes, clearly was intended for use in the field. The pages are full of amazing and incredibly clear images of various parts of the oval sedge plants important for accurate identification. The introduction includes important tips on terminology and identifying oval sedges, complimented by several figures consisting of line drawings and images that aid in educating a beginner. This section also helps those new to oval sedges

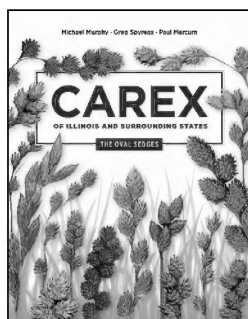
understand the impressive diversity in the group and directs them as to what to look for during identification. This is followed by a section on how to use the "Quick ID Groups" to narrow your search for an appropriate identification. Blown-up images of the perigynia of the 26 taxa of Illinois oval sedges fills a visually pleasing two-page spread, providing an exceptional look at the variety of shapes, colors, and sizes of the papery structures that surround the female flowers and fruits of the oval sedges. The guide to the species pages that follows is important

for understanding some of the coding used throughout the species accounts section.

The species accounts, which make up the bulk of the book, are two pages each for all of the taxa except *Carex cristatella*, *Carex projecta*, *Carex tribuloides* var. *tribuloides*, and *Carex tribuloides* var. *sangamonensis*. These have four pages each. The species accounts include valuable information on the top left about the habitat, distribution in Illinois and surrounding states, coefficient of conservatism value, wetland indicator status, and similar species. This is followed by detailed information on how the species differs from similar taxa, a critically important aspect of the book because many of the species have similar characteristics. A notes section, which includes etymology and other useful information, completes each account. Each account is enhanced with phenomenal photographs of spikes, perigynia (showing dorsal and ventral sides), pistillate scales, and achenes (all shown actual size and magnified), as well as images of the sheaths, which are often very helpful in species identification, though not often described in other botanical resources. Images are accompanied by captions that further help with identification.

After the species accounts, there is a section of additional photographs that are referenced in the species accounts. These show growth form and provide comparisons between species; especially useful are the additional perigynia, pistillate scale, and achene photographs, which show variability within a species and side-by-side comparisons between similar species. The glossary, references, and list of specimens photographed in compiling the book conclude this superior botanical guide.

The task of a "book reviewer" includes searching for shortcomings or mistakes present in the publication. It is with regret that I must note that, although many mistakes are trivial, they are more numerous than one would hope. In addition to the trivial, the glossary warrants critique. It attempts to direct the user to figures found throughout the book that help to describe a particular term. This is tremendously helpful to the beginner and expert alike, but unfortunately a number of the referenced figure numbers are



P. Rothrock

Missouri oval sedge (*Carex missouriensis*), now extirpated from Indiana, is still found in wet prairie remnants in central Illinois.

# The Virtues of Mayapple Fruit

incorrect. For example, references to the terms “sheath” and “collar” lead to figures 4 and 9; this should be figures 4 and 11; references to the terms “papillae” and “papillose” lead to figure 11; this should be figure 12. In one case, the figure referenced (12B) does not exist.

Another aspect of the book that is difficult for someone with experience using dichotomous keys to appreciate is that, rather than the traditional use of dichotomous keys to identify species, the book uses a system to identify species similar to that used in *Newcomb's Wildflower Guide*. This uses the perigynium shape, pistillate scale tip shape, and inflorescence length/spike number to determine a three-digit code that then leads the user to groupings of species that have those characteristics. The user then turns to those species accounts to try to best match their specimen. The system seems to work in concept, and it may be a logical way for some to identify an oval sedge to species, but for those who regularly use dichotomous keys, it is awkward.

Despite these limitations, *Carex of Illinois and Surrounding States: The Oval Sedges* is a tremendous technical yet very approachable reference and photo guide to a tricky group of plants, and it ranks in the top tier of my list of *Carex* books. The photographs throughout the book may be its greatest attribute. It is impossible to imagine the amount of time and attention to detail the authors put in to assure correct identifications of specimens and photograph miniscule parts of plants in preparing this monumental work. Whether you are an experienced botanist or just getting into plants and wondering what all the fuss is about sedges, I strongly recommend this book.

## Reference

Murphy, M., G. Spyreas & P. Marcum. 2025. *Carex of Illinois and the Surrounding States: The Oval Sedges*. University of Illinois Press: Urbana, Chicago, and Springfield.

Scott Namestnik is the botanist at the Indiana Natural Heritage Data Center, housed at the Indiana DNR – Division of Nature Preserves. He serves as the INPS Journal Team Leader and is a member of INPS North Chapter.

## By Nick Harby

The poetry of James Whitcomb Riley once was quite familiar to those who lived in our Hoosier state, across the country, and worldwide. I continue to enjoy his lines. Here is a small excerpt from his “Time of Clearer Twitterings.” In it Riley extols the fruit of mayapple (*Podophyllum peltatum*). He wrote for an audience that was more aware of the natural world than most of our society is today. As with our ancestors, most INPS members are aware of nature and strive to bolster our knowledge.

Personally, I have not found a mayapple as ripe as that described by Riley. Truth be told, unripe green mayapples are too sour for my taste. The critters must be getting to the ripe ones before I do! A reminder, wild foods should not be eaten without respect and knowledge. The mayapple plant has several poisonous aspects. Don't eat it without looking into that.



P. Rothrock

*“And will any poet sing  
Of a lusher, richer thing  
Than a ripe Mayapple, rolled  
Like a pulpy lump of gold  
Under thumb and finger-tips,  
And poured molten through the  
lips?  
Go, ye bards of classic  
themes,  
Pipe your songs by classic  
streams!”*

*The unripened fruit of mayapple tends to be ignored by deer, squirrels, and the like; but when fruits reach the lump of gold stage described by Riley, they get quickly harvested. The flavor of the ripe mayapple fruit, I am told, is like a somewhat musty strawberry or mango.*

Nick Harby is a member of the West Central Chapter of INPS.

# Biodiversity Grants: Update

## By Molly Baughman

INPS Biodiversity Grants fall into three different categories. Research grants support study of native plants to learn more about their propagation, habitat needs, life cycle, or restoration or to test strategies for controlling invasive plants that threaten native flora. Demonstration Garden projects showcase the use of native plants in landscaping a public site, while the third category, Land Management and Conservation, seeks to ecologically manage and/or restore natural areas. Generally, grant amounts range between \$400-\$1,500, with monies paid upon successful completion of the project.

Recently, two projects from the 2023 grant cycle made their final reports and provided some images of their success.

### Posey County Soil and Water Conservation District

The Posey Invasive Partnership in collaboration with Posey County SWCD was awarded a \$1,500 grant to continue establishment of native plant gardens. In particular, INPS funds were used to purchase native plants and signs for 3 sites: the Willow Tree Healing Garden at Brittlebank Park, Atrium Garden at North Posey Junior High, and Marrs Township Community Pollinator Garden.

*Views of the Willow Tree Healing Garden (left) and Atrium Garden (right) at North Posey Junior High.*



courtesy INPS Grants Committee

### Niches Land Trust

Niches Land Trust was awarded \$800 for their ADA Garden Project at Clegg Memorial Garden, Lafayette, Indiana. In the demonstration garden non-natives were removed, natives planted, and plant identification signs added. INPS funds were used to buy native plants, seeds, and signs.

### 2024 Grant Awards

A total of 24 applications were received by the October 1, 2024 deadline. Accepted proposals include the following:

- Friends of Potato Creek was awarded \$1,500 for a Prairie Education Garden outside the Potato Creek State Park Nature Center.
- Boone County Invasives Cooperative was awarded \$1,500 for their Pleasant Acres Restoration Project.
- Earlham College was awarded \$1,500 for Enhancing the Biodiversity of Earlham College's Back Campus.
- ACRES Land Trust was awarded \$2,000 from a separate research grant budget for the Jesse & Agnes Riegsecker Natural Area Botanical Inventory.

### 2025 Grant Applications

The 2025 grant application will be open for submissions from September 1 to October 1, 2025. For more information go to <https://indiananativeplants.org/inps-biodiversity-grants/>. Molly Baughman, a member of the INPS Central Chapter, chairs the INPS Biodiversity Grants Committee.



courtesy INPS Grants Committee

*The ADA Garden Project at Clegg Garden.*

# Friends of the Limberlost: Native Plant Conservation In Action

## By Terri Gorney Lehman

On July 20, 2024, The Friends of the Limberlost (FOL) attended a land auction in northern Jay County and was the highest bidder on 10.57 acres of wooded property that abuts the Loblolly Marsh Nature Preserve. At two previous land auctions, FOL's hopes of adding more restorable wetland to Loblolly were dashed. FOL was quickly out-bid due to soaring land prices. Fortunately, we were more prepared this time.

The Friends of the Limberlost, a 501(c)3 not-for-profit, assists both Limberlost State Historic Site and Indiana DNR Nature Preserves by providing volunteers and funding for various projects. Several FOL board members, DNR-Nature Preserves Regional Ecologist, Ryan Smith, and the Limberlost State Historic Site naturalist, Curt Burnette, attended the July on-site auction involving 60 acres that had been divided into 6 parcels. Two of the 6 parcels were located adjacent to the Loblolly Marsh Nature Preserve, a state dedicated preserve and part of the 1,800-acre Limberlost Conservation Area. FOL were hoping to purchase about 20-acres of woods, but, as the auction prices climbed higher and higher, was only able to purchase about half that amount.

FOL paid \$232,000, more "per acre" than we have ever paid for land. Fortunately for us, five generous donors and many smaller contributions made this cash purchase possible. The property was once part of the historic 13,000 acre Limberlost Swamp that Indiana author, Gene Stratton-Porter, made famous in her books and nature photographs. We are pleased that this is another piece that can be added to the 500-acre Loblolly Marsh Nature Preserve and become part of the Limberlost Conservation Area.

For members of INPS, the most significant result of this acquisition was saving a population of Baxter's violet (*Viola baxteri*), a species known in only a few areas in eastern Indiana. Ryan Smith, Curt Burnette, and FOL board members Willy De Smet, Greg McCallister, and Randy Lehman walked this property prior to the auction. They discovered Baxter's violet in a woods that is rich in native plants and has few invasive species.

The first clean-up day, organized by Ryan Smith, was April 3. About 1,600 feet of fencing

was removed by DNR personnel and FOL board members: Jeff & Jackie Caffee, Greg McCallister, Alivia Markham, Kristen Hathaway, and Ron & Ladonna Habegger. Ryan stated, "I am grateful to have a group of individuals to work alongside that is dedicated to protecting and restoring the land of the Limberlost."

Prior to this most recent purchase, FOL was able to purchase 10.42 acres in 2020. This land was successfully restored to wetlands under the guidance of U.S. Fish & Wildlife Land Biologist, Scott Feters. Migrating waterfowl and shorebirds are now using this small area especially in the spring of the year.

In another project, FOL is working on the restoration of 17 acres of the White Oak Cemetery Nature Preserve which is on the north side of Loblolly. In 2016, FOL helped DNR Nature Preserves purchase this 40-acres tract, half of which is wooded. The other half (that until last year was rented to a farmer) was to be restored this year with federal funds. Those funds were suddenly frozen under the Trump administration. Rather than allowing this land to become overrun with invasive plant species, FOL paid \$8,716 for a native seed mix from Spence Nursery as recommended by Ryan Smith.

Obviously, FOL's main goal for 2025 is rebuilding funds for future land purchases and restoration projects. Land auctions come up quickly and it is important to have funds ready.

But thanks to cooperation between government agencies and local citizens ... The Limberlost Lives Again!

*Terri Lehman is Secretary for FOL. Her husband, Randy Lehman, is the retired Limberlost Site Manager and currently the Treasurer and Membership Chair for FOL. Both are members of the Northeast Chapter of INPS.*



Terri Gorney Lehman

*Baxter's violet is endemic to the eastern Great Lakes region, being found from New York to Indiana and from Ontario to Kentucky. In Indiana it reaches the western extent of its range. Our few populations occur in Allen and Jay counties. It is extirpated from Wells County (based on an old specimen). As an indication of its rarity, the species is S1 in Indiana, S2 in Ohio, S1S3 in Pennsylvania; it hasn't been assessed in the other states.*



## Dunes — continued from back page

acres of high dunes. However, the effort was unsuccessful. The University of Chicago rejected a faculty recommendation to buy 2,000 acres as a field station. Julius Rosenwald, the President of Sears, Roebuck and Company, refused to establish a school of horticulture in the dunes. Henry

Ford declined the opportunity to fund a 5,000-8,000-acre arboretum. It was then that the consortium turned to the public sector for help.

In 1916, 3,000 dune supporters met at Waverly Beach to establish the National Dunes Park Association, combining advocates from both Chicago and Indiana.

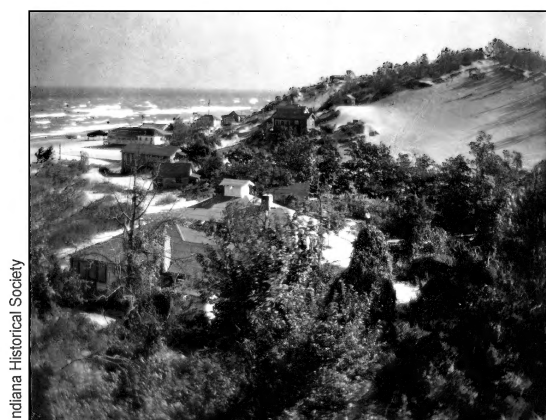
Armanis Knotts, the Mayor of Hammond, became its president. He worked with Elbert Gary, who was building US Steel in Gary and who had procured 9,000 acres, hoping that US Steel would donate land for a public park next to the steel mill complex that was being developed.

Stephen Mather as the first director of the newly established National Park Service advocated the creation of a Sand Dunes National Park, which, if it happened, would be the first time federal funds would be used to acquire a national park. A hearing was held in Chicago on October 30, 1916, with over 400 people

in attendance. At the hearing, Mayor Knotts advocated that there was room for both industry and a park if properly planned. He proposed a 20-mile-long national park between Gary and Michigan City. The report that came from the hearing urged Congress to authorize \$1.8-2.6 million to acquire 9,000-13,000 acres. The report was given to every member of Congress. But then it stalled. Indiana Senator Thomas Taggart, an enthusiastic supporter, lost his bid for re-election, and World War I broke out.

Perhaps the only positive that came out of this effort seems to be that US Steel donated a 116 acre tract on the lakefront near Miller Woods. This was dedicated on Columbus Day in 1919 as "Lake Front Park," and was later expanded and became Marquette Park.

Since a national park now seemed unlikely, efforts turned to a more modest attempt in favor of establishing a state park. Richard Lieber, a prominent citizen of Indianapolis, who had started visiting the Indiana Dunes in 1910, had been a member of Indiana's Historical Commission, and was charged with oversight of Indiana's centennial statehood celebration. The Commission voted to inaugurate a state park system in Indiana. Lieber became Chairman of the State Park Memorial Committee, and by the end of 1916, had purchased two state parks, McCormick's Creek and Turkey Run. Lieber was then appointed by Governor James Goodrich as the first director of the newly established Indiana Department of Conservation. Lieber then set to work trying to convince a reluctant state legislature to appropriate the funds needed to purchase a part of the dunes. In his annual report for the Department of Conservation, he said "it was now the privilege and duty of Indiana, with private assistance, to preserve this heritage and God-given spot." He proposed a Dunes State Park consisting of 8 miles of shoreline, and asked for \$1 million from the Legislature, to be matched with \$1 million from wealthy benefactors. A.J. Bowser, the owner of the Chesterton Tribune, had opposed having a national park in Porter County, but supported setting aside an area that would run from



Indiana Historical Society

*Above: This photo shows Prairie Club residences nestled among cottonwood (*Populus deltoides*) and Jack pine (*Pinus banksiana*) near Waverly Beach in the present day Indiana Dunes State Park. The Club, formed by early recreational enthusiasts, was an influential promoter of the Dunes.*

*Below: Frank Dudley (1868-1957) gained a reputation for his many paintings that celebrated the natural beauty of the Indiana Dunes. In this case, he is situated in a foredune with marram grass (*Ammophila breviligulata*). Once Dunes Park was established his studio was on state land. He traded one painting per year in exchange for the use of his Dunes location.*



Indiana Historical Society

Burns Ditch to LaPorte County, which would include 15 miles of Lake Michigan shoreline. The City of Gary endorsed an Indiana Dunes Park to be incorporated into the park system of the Indiana Department of Conservation. A coalition of volunteers including Prairie Club members and the American Federation of Labor started lobbying. Bess Sheehan, an officer of the Indiana Federation of Women's Clubs, contacted every state legislator. On January 1, 1923, Lieber wrote in his diary "The Legislature meets – let us pray." Soon, House Bill 144 incorporated Lieber's proposal, but limited the size of the state park to 3 miles of lakefront and 2,000 acres. The bill passed, 52-51, and the Senate approved it as well. On March 6, 1923, Gov. Warren T. McCray signed Indiana Dunes State Park into law.

It took several years for all the required funding to be appropriated and donated. By then, land prices had skyrocketed. Lieber lobbied the rich industrialists, but didn't have much success. In 1925, newly elected Governor Edward Jackson went on a trip to the dunes with Lieber. Lieber hoped that once Gov. Jackson saw the dunes, he would "call them friend." In May 1925, on his first visit to the Dunes, Gov. Jackson and his entourage climbed Mount Holden. Then, on his own, Gov. Jackson scaled Mount Tom and Mount Green. As a result of that awe-inspiring trip, he directed that \$200,000 of accumulated tax revenue be used to purchase the first acreage immediately. By August 1925, the boundaries of the new state park were set. On August 29, 1925, the first duneland deed was delivered to the state in a small ceremony on Mount Green, which was renamed Mount Jackson. The 120-acre parcel included Mount Tom. The owner, John O. Bowers Sr. set the price at \$300/acre, 50% of market value, to set a comp for future purchases.

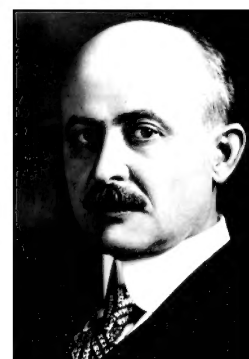
Soon after, the Prairie Club sold its 55 acres at cost. Then US Steel Chairman Elbert Gary gave \$250,000 and Sears President Julius Rosenwald gave \$50,000, enabling more land to be acquired. On July 1, 1926, the first gate fees charged to visitors were collected. The Park had 62,880 visitors in the first 3 months. Richard Lieber erected

a plaque in honor of Stephen Mather in the center of the park. At last, a small portion of the original massive Indiana Dunes ecosystem had been protected.

No history of the Indiana Dunes State Park would be complete without noting the importance of establishing the Indiana Dunes Nature Preserve in 1971. At that time the Indiana Natural Resources Commission dedicated 1591 acres within the State Park as a nature preserve. This ensures that the vast majority of the state park will remain a high quality, undeveloped natural area in perpetuity. The nature preserve is floristically outstanding, second only to the Cowles Bog Unit of Indiana Dunes National Park. Its statistics boast of 685 native taxa, with a mean Coefficient of Conservatism of 6.4 and an amazing Floristic Quality Index of 170. It included 99 species that were listed as state endangered, threatened, or rare during the 1970s. Another nature preserve, the 58-acre Dunes Prairie Nature Preserve, protects a significant prairie remnant on the park's west side. To modern eyes it seems obvious that these areas deserved protection from development. We forget how perilous and unpredictable was their journey to that end point.

*John Bacone, retired Director of the Division of Nature Preserves, is a member of the INPS Central Chapter.*

*Richard Lieber (1869-1944), the first director of the newly established Indiana Department of Conservation.*



Courtesy of INDR



Indiana Historical Society

*This photograph (ca. 1917) shows the Gene Stratton-Porter family having a picnic in the sand. Gene is the dark figure in the center.*



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*This 1927 map of the "Duneland" states that the old trails were made by Indians and pioneers: "Beyond each bend, over each hill lies a new Land of Romance, unchanged through the ages."*



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# Dunes State Park Established 100 Years Ago

**By John Bacone**

Indiana's Calumet Region, with its extensive dunes and wetlands covering much of the north halves of Lake, Porter, and LaPorte counties, was "Indiana's last frontier." The area was originally not viewed as an asset. In 1821, Indiana Boundary Commissioner John Tipton reported that the area "never can admit settlement nor ever will be of much service to our state."

However, the nearby soon-to-be metropolis of Chicago did realize its value and started exploiting and altering the large wilderness. The dunes themselves ran intermittently for 14 miles between Gary and Michigan City. They were covered with white pines (*Pinus strobus*), which were quickly cut and shipped to Chicago for housing construction. Hundreds of pounds of blueberries and cranberries (*Vaccinium* spp.) were harvested annually and shipped to Chicago.

Step-by-step the entire wilderness area was obliterated. By 1897, big ditches drained the wetland complexes. Also by the late 1800s, new economic interests overshadowed hunting, gathering, and agriculture. Sand was mined and moved by rail or ship to Chicago for fill and building construction. In 1899 Standard Oil started construction of a huge refinery in Whiting. In 1901 Inland Steel laid the foundation for the nation's largest steel plant, in East Chicago. In 1906 US Steel purchased 9,000 acres of low dunes and sloughs along 7 miles of shoreline and founded the town of Gary.

While this was happening, a small band of Chicago reformers, artists, and scientists, and a few sympathetic Hoosiers, began the struggle to save the Indiana Dunes. These included the poet Carl Sandburg, ecologist Henry Cowles, artist Frank Dudley, landscape architect Jens Jensen, conservationist Richard Lieber, future director of the National Park Service Stephen Mather, and nature writer Donald Culross Peattie. The struggle became a movement. Get-away weekend excursions, pageants, and art exhibits celebrated and publicized the dunes. While Dr. Cowles had once declared the area would forever be a wilderness, he saw the dunes being hauled away and destroyed by indiscriminate development. Cowles and his students had described and documented ecological succession, and his studies had shown the Indiana Dunes to be of global significance. The Dunes were the place where the flora from the east and west, and from the north and south, had coalesced into a botanical Garden of Eden.

As industry pushed in from the west, the realization set in that the Dunes were not self-protecting; there was a need to permanently protect them. The first organized attempt began in 1914. The Prairie Club, founded in 1911, convened a meeting with other groups, and formed the Conservation Council of Chicago. The group was led by Jensen and Cowles. They sought private funding to purchase

*Dunes — continued on page 14*



Indiana Historical Society

*This lantern slide by William Gingrich shows a steam shovel loading the sand of the dunes into waiting train cars. The Hoosier Slide was Indiana's largest sand dune until it was leveled in 1920. It provided sand for the signature blue-colored glass associated with Ball Brothers jars.*